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REMARKS

Applicants appreciate the thorough review of the present application as reflected in the Official Action mailed October 22, 2004. Applicants also appreciate the indication of allowable subject matter in renumbered Claims 12, 25, 31, 33 and 35. Applicants have amended the claims to renumber the claims to be consistent with the renumbering of claims as stated in the Official Action. Applicants have also amended the claims to correct dependencies in light of the renumbering and to correct typographic errors in the original claims.

The IDS

Applicants appreciate the Examiner returning initialed copies of the PTO-1449 forms submitted by Applicants. Applicants wish to bring to the attention of the Examiner an Information Disclosure Statement (IDS) that was filed in the present case on September 13, 2004. Applicants request that the Examiner return an initialed copy of the PTO-1449 form submitted with the September 13, 2004 IDS indicating consideration of the cited references in any subsequent communication.

The Claims Are Patentable Over Barrera

Renumber Claims 1-11, 13-17, 19-24, 26-30, 32, 34 and 36-47 stand rejected under 35 U.S.C. § 103(a) as obvious in light of United States Patent No. 6,247,057 to Barrera, III (hereinafter "Barrera"). Applicants submit that these claims are patentable over Barrera for at least the reasons discussed below.

Barrera appears to relate to a system for allowing requests to multiple services that would otherwise use the same port. See Barrera, col. 6, lines 8-33. Barrera describes a problem where incoming requests to use a service specify the same port. The requests for different virtual services are differentiated by the IP address. Barrera, col. 6, line 64 to col. 7, line 13.¹ However, as described in Barrera, the

¹ Note that the references to the same IP address found at col. 7, lines 2-3 of Barrera appears to be in error as it is inconsistent with the table provided in col. 7. Furthermore, if the IP address of the requests are the same, then the system of Barrera does not appear to describe any mechanism for differentiating between the requested services. Thus, Applicants submit that the second reference to "192.56.85.7" at col. 7,

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operating system strips the IP address from the request and, therefore, all requests to the same port appear as a request to the same service. See Barrera, col. 6, lines 8-23. Barrera appears to solve this problem by associating different service instances with different predefined ports and then mapping the IP address of the request to the predefined ports so as to differentiate between service requests that would otherwise use the same port. See Barrera, col. 6, line 39 to col. 7, line 13. Barrera describes an endpoint ID creator that establishes the relationship between the designated endpoint IDs (e.g. the globally known port for the type of service) and the new endpoint ID (e.g. the remapped port for a particular instance of a virtual service). See Barrera, col. 8, lines 34-52. Thus, Barrera appears to relate to mapping of incoming requests to multiple service instances that share a common port identification from the requestor's perspective. The mapping is not made on a connection by connection basis, but appears to be static once established and does not appear to be responsive to a connection being established but, rather, is responsive to a service starting.

In contrast to the re-mapping system of Barrera, embodiments of the present invention relate to port selection on a connection level basis for connections originated by applications that share a common network address. Thus, for example, Claim 1 recites:

1. (Original) A method of assigning a port for a connection originated by one of multiple application instances, the multiple application instances executing on different data processing systems and utilizing a common network address, comprising:
 - providing an indication of available ports for the common network address to each of the different data processing systems executing the multiple application instances; and
 - selecting a port identified as available as the port for the connection utilizing the common network address.

Applicants submit that at least the highlighted portions of Claim 1 are neither disclosed nor suggested by Barrera.

The Official Action states that Barrera discloses a system and method for assigning a virtual port for a connection originated by one of the multiple applications. Official Action, p. 3. However, the Official Action does not cite to any

line 3 of Barrera appears to be in error and should be to "192.56.85.8" to be consistent with the table.

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portion of Barrera to support such an assertion. As discussed above, Barrera relates to mapping incoming requests for use of a service to multiple instances of the service, not to assignments of ports for connections initiated by the services. As such, Applicants submit that the Official Action has failed to establish that Barrera discloses or suggests "a method of assigning a port for a connection originated by one of multiple application instances, the multiple application instances executing on different data processing systems and utilizing a common network address" as recited in Claim 1.

Furthermore, the Official Action does not address the language of Claim 1 that recites that the multiple application instances utilize a common network address. As is clear from the above cited portions of Barrera and despite the apparent typographic error in Barrera, the IP addresses appear to be different for the different instances of a service, but the ports are the same. In contrast, Claim 1 recites that the multiple application instances utilize a "common network address" and that the selected port is used "for the connection utilizing the common network address." Applicants submit that the portions of Barrera cited in the Official Action do not disclose or suggest the selection of ports for connections utilizing a common network address as recited in Claim 1.

With regard to the language of Claim 1 that recites "providing an indication of available ports for the common network address to each of the different data processing systems executing the multiple application instances," the Official Action does not address the recitations that the indication is provided "to each of the different data processing systems executing the multiple application instances," but merely cites to a portion of Barrera that discusses a mapping table. The citation to Barrera, col. 8, lines 53-63 does not appear to disclose or suggest that the table is provided to the processing systems executing application instances that are originating connections. As such, Applicants submit that the cited portion of Barrera does not disclose or suggest these recitations of Claim 1.

The Official Action also cites to col. 6, line 64 to col. 7, line 13 of Barrera as disclosing the selection of a port as recited in Claim 1. However, as discussed above, Applicants submit that this portion of Barrera does not relate to the assignment of ports for connections utilizing a common network address but, instead, uses the

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network address as a differentiator and selects a port based on the different network addresses. See Barrera, table in col. 7. As such, Applicants submit that the cited portions of Barrera do not disclose or suggest "selecting a port identified as available as the port for the connection utilizing the common network address" as recited in Claim 1.

In light of the above discussion, Applicants submit that Claim 1 and the claims that depend from Claim 1 are neither disclosed nor suggested by the cited portions of Barrera. Recitations corresponding to those of Claim 1 are also found in independent Claims 44 and 46 and, Applicants submit that these claims are also patentable over the cited portions of Barrera for analogous reasons.

Independent Claim 13 recites:

13. (Original) A method of coordinating port assignments for connections utilizing a dynamic virtual Internet Protocol address (DVIPA) as a source address, wherein the DVIPA is utilized as a source address for connections originated by a plurality of data processing systems, comprising:
maintaining an indication of available ports associated with the DVIPA in a storage facility which is commonly accessible to communication protocol stacks of the plurality of data processing systems; and
selecting a port for a connection utilizing the DVIPA as a source address based on the indication of available ports associated with the DVIPA in the storage facility.

Applicants submit that at least the highlighted portions of Claim 13 are not disclosed or suggested by the cited portions of Barrera. Claim 13 is rejected based on grounds similar to that of Claim 1. Official Action, p. 4. To the extent that the language of Claim 13 is analogous to that of Claim 1, Applicants submit that Claim 1 is patentable over the cited portions of Barrera for reasons analogous to those discussed above with reference to Claim 1. Furthermore, Claim 13 expressly recites the use of a dynamic virtual IP address (DVIPA). Applicants can find no reference or corresponding recitations of the cited portions of Barrera that would disclose or suggest the use of a DVIPA with the system of Barrera. Furthermore, Applicants can find no reference in the cited portions of Barrera that disclose that the indication of available ports is stored in a commonly accessible storage facility where the storage facility is accessible to the data processing systems that are originating the connections. As

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such, Applicants submit that Claim 13 and the claims that depend from Claim 13 are patentable over the cited portions of Barrera. Recitations corresponding to those of Claim 13 are also found in independent Claims 45 and 47 and, Applicants submit that these claims are also patentable over the cited portions of Barrera for analogous reasons.

Independent Claim 38 recites:

38. A system for coordinating port assignments for connections utilizing a dynamic virtual Internet Protocol address (DVIPA) as a source address, wherein the DVIPA is utilized as a source address for connections originated by a plurality of data processing systems, comprising:
a plurality of communication protocol stacks executing on the plurality of data processing systems;
a storage facility accessible to the plurality of communication protocol stacks; and
wherein the plurality of communication protocol stacks are configured to maintain an indication of available ports associated with the DVIPA in the storage facility and select a port for a connection utilizing the DVIPA as a source address based on the indication of available ports associated with the DVIPA in the storage facility.

Applicants submit that to the extent Claim 38 has recitations analogous to those of Claim 13, that Claim 38 and the claims that depend from Claim 38 are patentable over the cited portions of Barrera for at least reasons analogous to those discussed above with reference to Claim 13.

Applicants also submit that many of the dependent claims are separately patentable over Barrera.

Conclusion

In light of the above discussion, Applicants submit that the present application is in condition for allowance, which action is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,



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